Stoneridge

Stormwater Management Project

October 9, 2014 Public Meeting

Montgomery County Department of Environmental Protection
Watershed Management Division

Department of Environmental Protection
Montgomery County Maryland

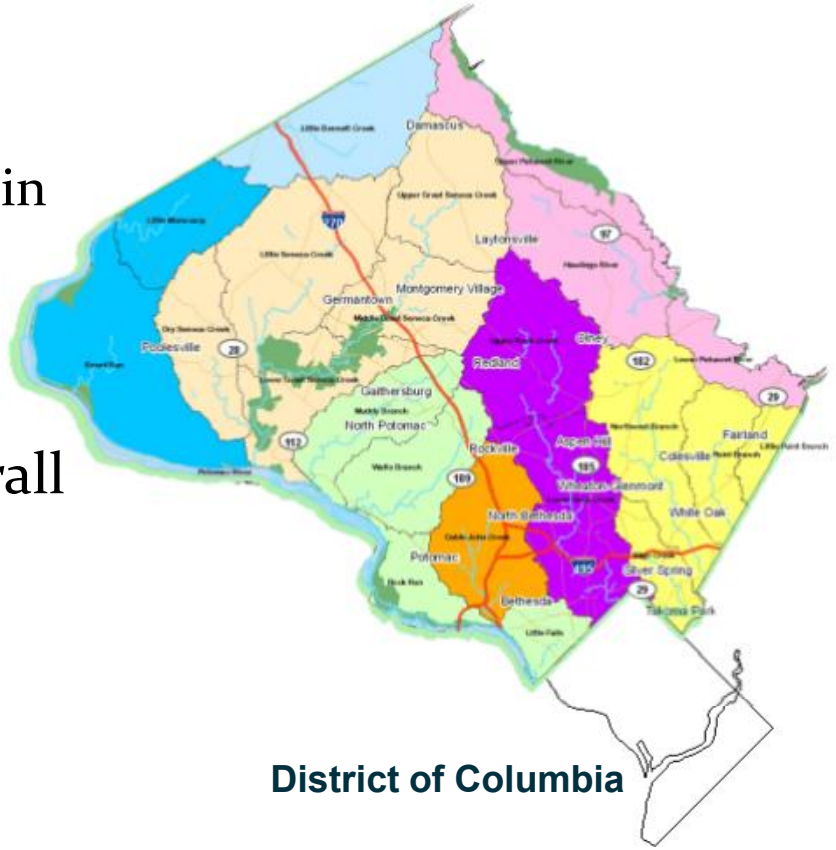
CPJ Associates

Today's Agenda

- Introductions
  - **Rebecca Winer-Skonovd – Project Manager; Montgomery County DEP/JV**
  - **Paul Bogle– Senior Engineer; Montgomery County DEP**
  - **Jeff Blass – Project Designer; Charles P. Johnson & Associates, Inc.**
- Background Information – Why County is Doing This
- Stormwater Management Overview
- Project Objectives
- Project Costs and Benefits
- Design and Permitting Timeline
- What to Expect During Construction

Montgomery County, MD

- 500 sq. miles
- 1,000,000 people
  - Second only to Baltimore City within Maryland in average people per square mile
  - 184 languages spoken
- About 12% impervious surface overall
  - About the size of Washington DC
- Over 1,500 miles of streams
- Two major river basins:
  - Potomac
  - Patuxent
- Eight local *watersheds*



Impervious: Not allowing water to soak through the ground.

What is a Watershed?

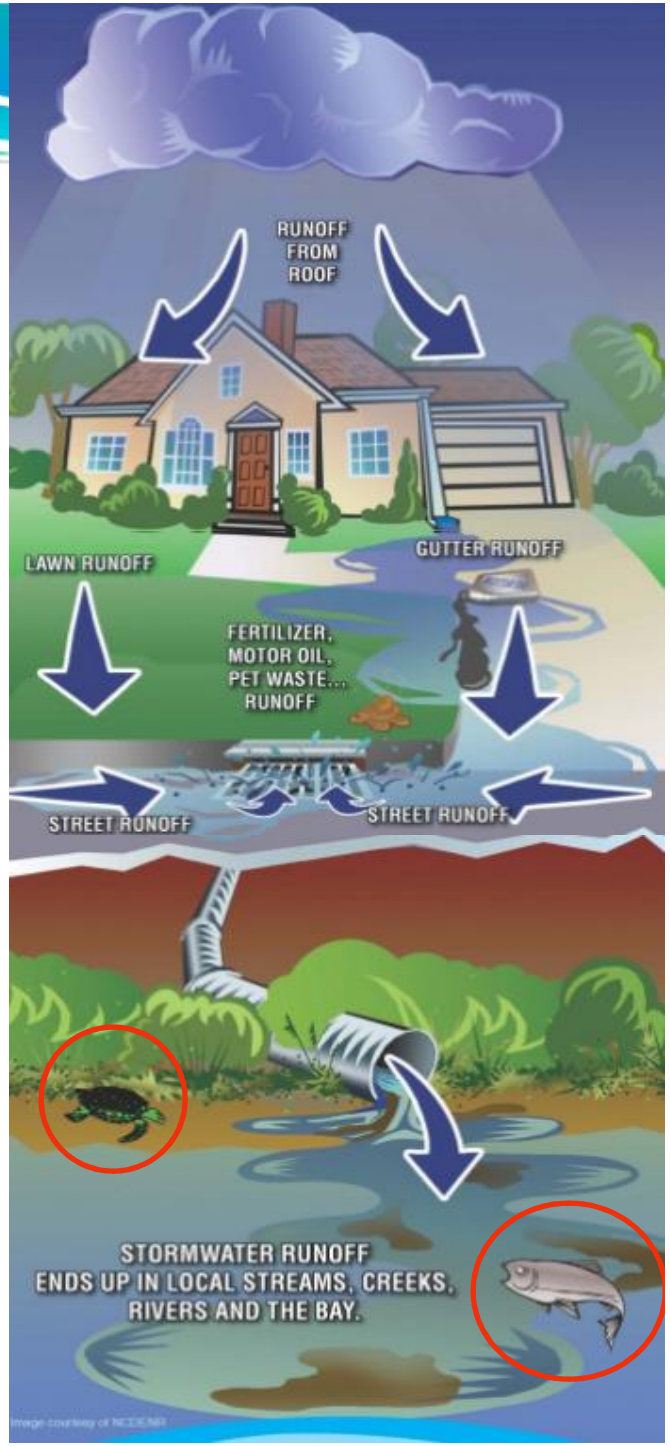
- A ***watershed*** is an area from which the water above and below ground drains to the same place.
- Different scales of watersheds:
  - Chesapeake Bay
  - Eight local watersheds
  - Neighborhood (to a storm drain)

What is Runoff?

Water that does not soak into the ground becomes surface runoff. This runoff flows over hard surfaces like rooftops, driveways and parking lots collecting potential contaminants and flows:

- **Directly into streams**
- **Into storm drain pipes, eventually leading to streams**
- **Into stormwater management facilities, then streams**

Two Major Issues:
Volume/Timing of Runoff
Water Quality



Watershed 101

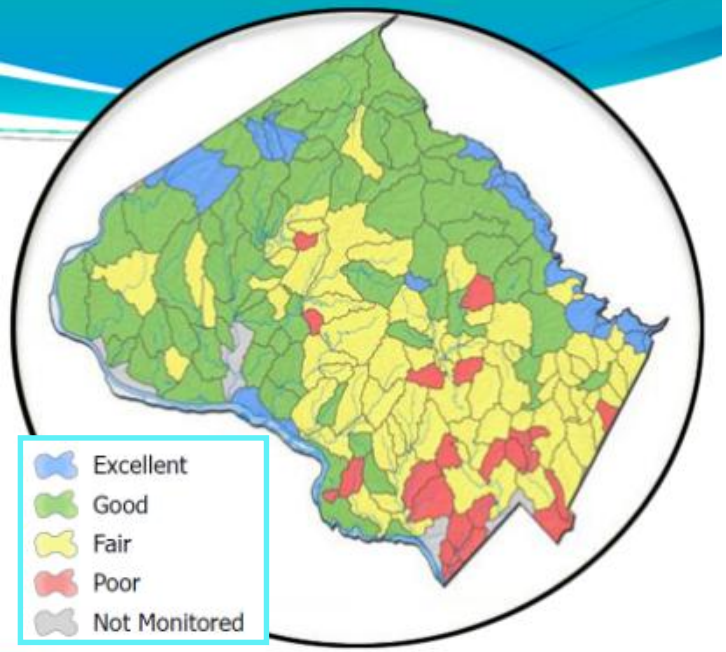
Urban Impacts to Streams

Stream in a Watershed with 8% impervious cover.

Stream in a Watershed with 20% Impervious Cover

Stream in a Watershed with 30% impervious Cover.

Watershed 101



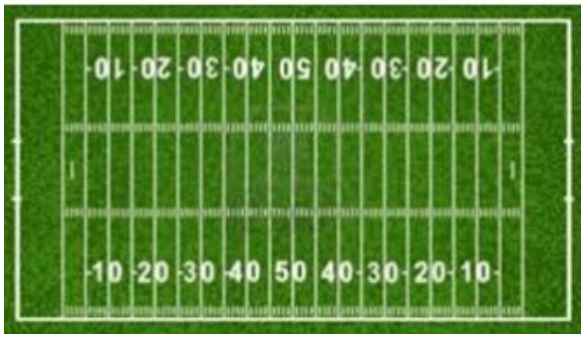
- **What is the County doing to protect our Streams?**

- Must meet regulatory requirements
  - Federal Clean Water Act permit program
  - **MS4** = **M**unicipal **S**eparate **S**torm **S**ewer **S**ystem
- Applies to all large and medium Maryland jurisdictions
- County Programs
  - Restore our streams and watersheds
    - Add runoff management
  - Meet water quality protection goals
    - Reduce pollutants getting into our streams
  - Educate and engage all stakeholders
    - Individual actions make a difference
  - Focus on watersheds showing greatest impacts

What is the County Doing to Protect our Streams?

- Montgomery County is responsible for:
  - What goes into our storm drain pipes
  - What comes out of them
  - What flows into the streams
- DEP is adding stormwater management for 20 % of impervious surfaces (4,292 acres = 6.7 square miles)… About three times the size of Takoma Park.

That's equivalent to 3,307 football fields!



Resources

- Specific Project Information

  http://www.montgomerycountymd.gov/DEP/Restoration/stoneridge.html

- General Information

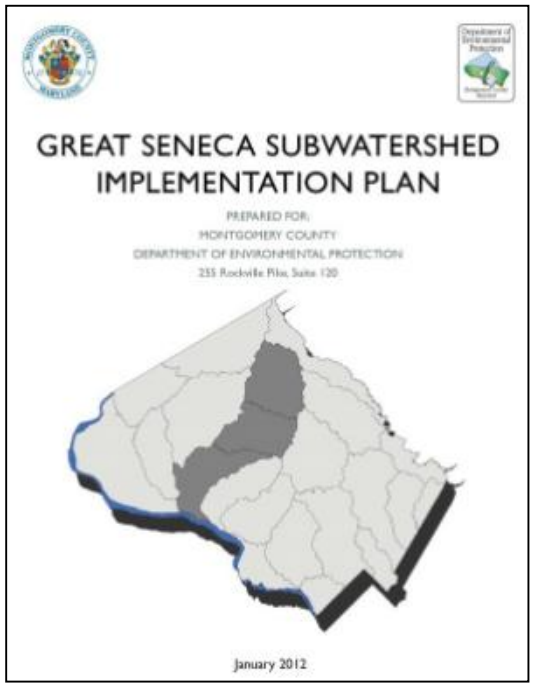
  www.montgomerycountymd.gov/DEP

- Living a Green Life: My Green Montgomery

  http://montgomerycountymd.mygreenmontgomery.org/

Project Selection

- Ponds constructed in early 1980s
- Located in a key watersheds (Great Seneca Creek) for pond retrofits
- Ponds are at or near the end of service life
- Meet current safety and design standards
- Opportunity for water quality treatment and ecological benefits



Project Location

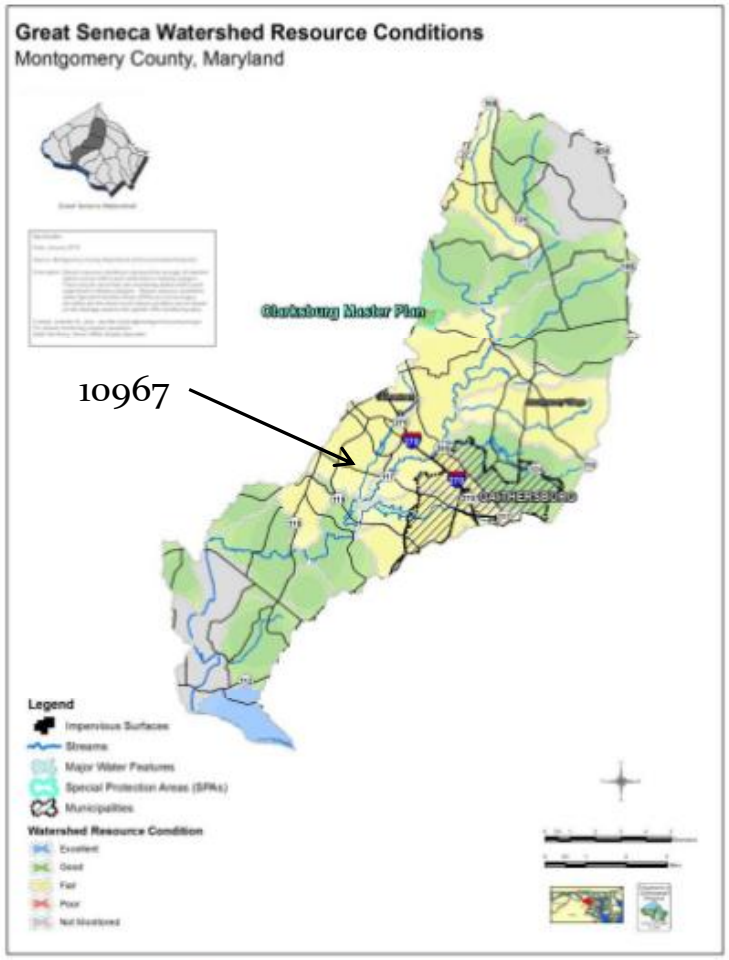
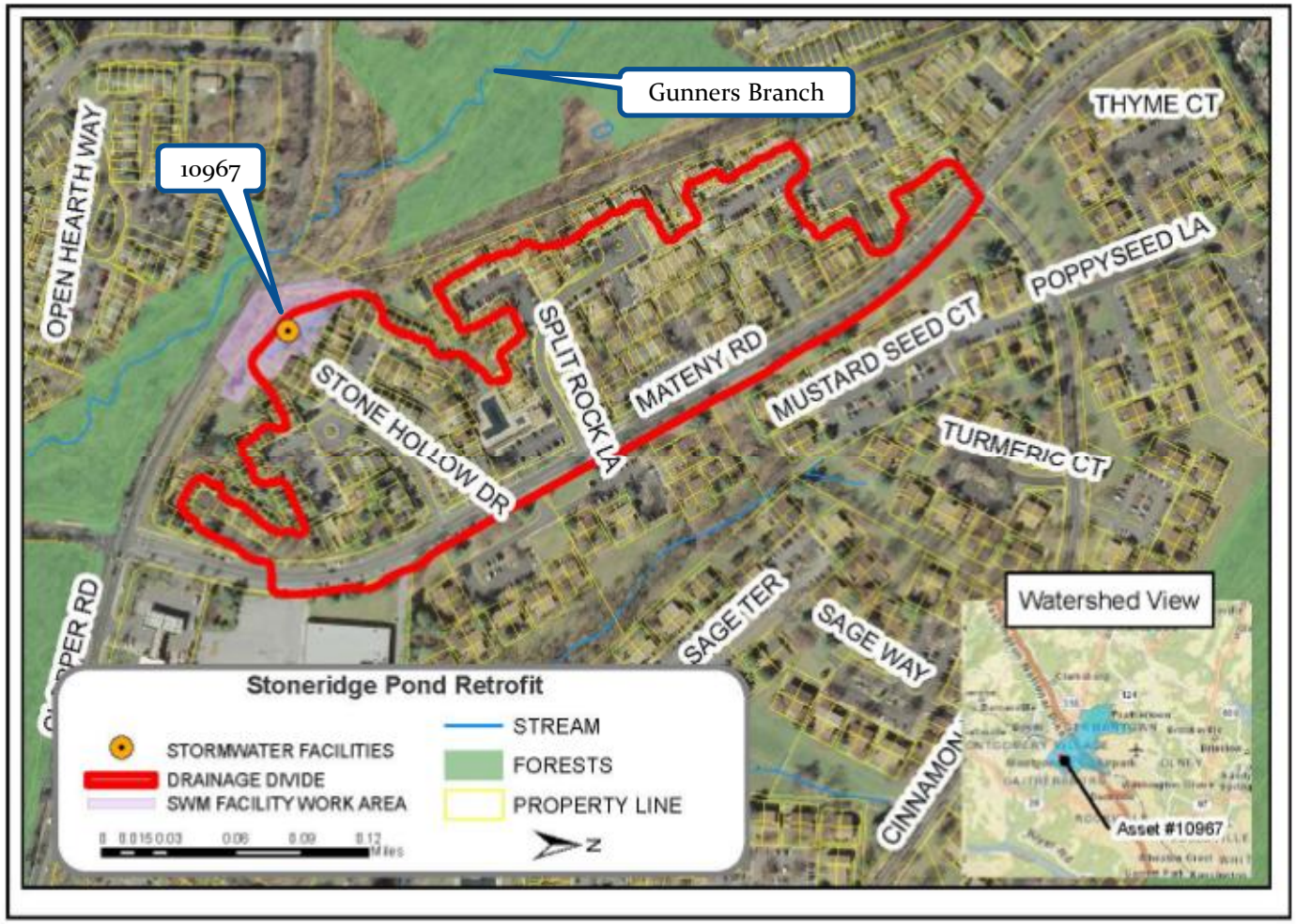


Figure 2: Stream Resource Conditions for the Great Seneca subwatershed

Stoneridge SWM Project

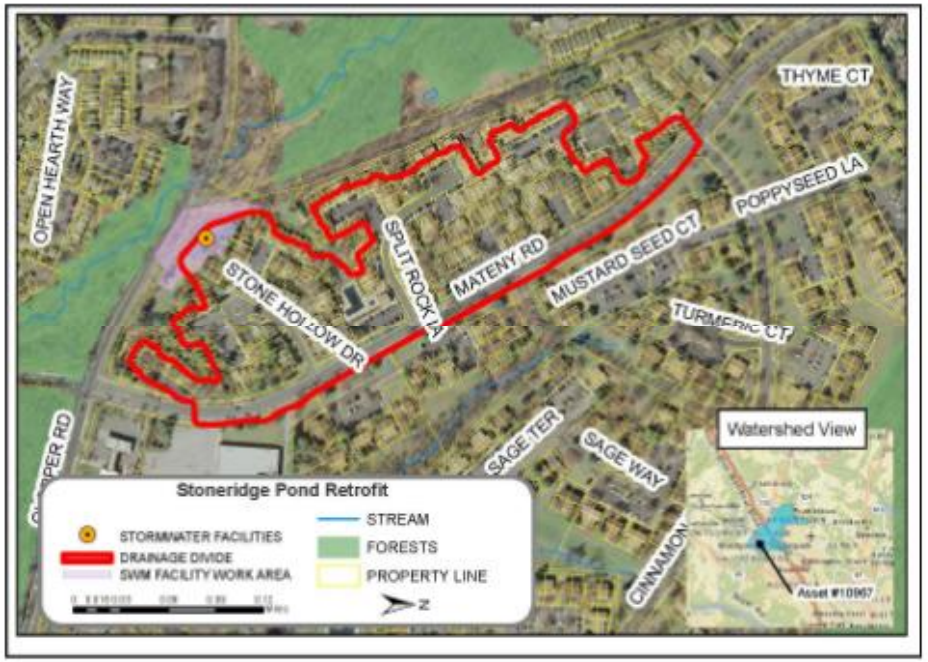


Project Objectives

- STORMWATER MANAGEMENT
  - Convert existing dry pond to surface sand filter to provide water quality treatment
- STREAM PROTECTION
  - Modify outlet works to better regulate pond discharge and protect Gunners Branch and Seneca Creek streams
- MAINTENANCE
  - Replace existing riser with water-tight structure
  - Replace dam embankment and install impervious core
  - Install internal drain in downstream embankment
- AESTHETICS
  - Landscape the facility to improve aesthetics

Stormwater Pond Drainage Area

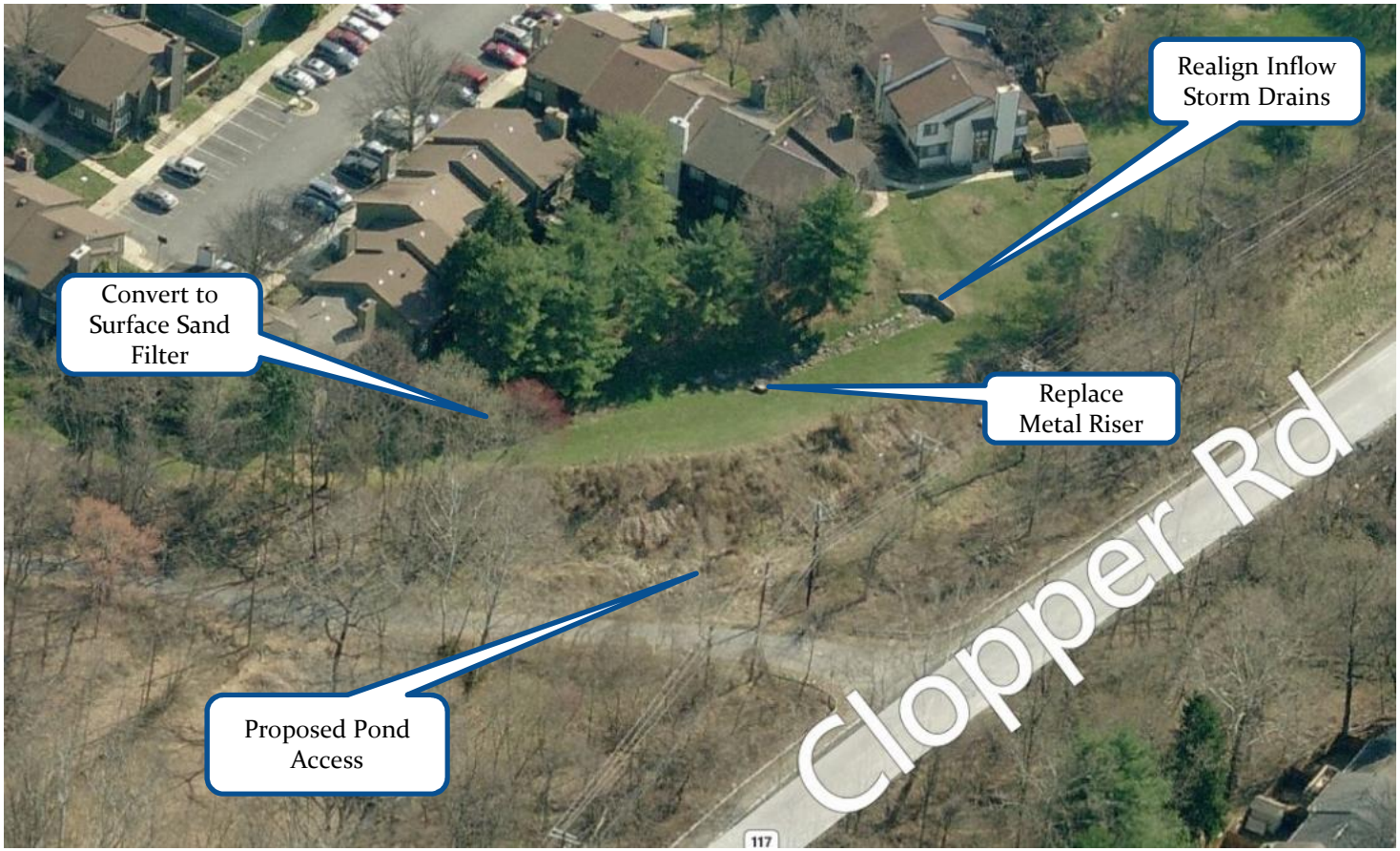
- Stoneridge Pond (Asset #10967)
  - 18.76 Acres
  - 54.6% Impervious



Pond 10967

- Stormwater Management Dry Pond
  - 8’ High Earth Embankment Dam
  - Adjacent residential properties
  - Does not meet current SWM requirements to achieve any MS4 credit.
  - Riser not installed properly

Pond 10967


Realign Inflow Storm Drains
Convert to Surface Sand Filter
Replace Metal Riser
Proposed Pond Access
Clopper Rd
117

Project Objectives – Stormwater Management

- Convert to Surface Sand Filter to provide water quality treatment
- Realign inflow storm drains

Project Objectives - Streams

- Modify outlet works to better regulate pond discharge and protect Gunners Branch and Great Seneca Creek
- Achieve partial water quality treatment

Project Objectives - Maintenance

- Replace existing risers with water-tight structure
- Install impervious core in dam embankment
- Install internal drain in downstream embankment

Project Objectives - Aesthetics

- Sod and landscape facility with native vegetation to improve aesthetics

Project Objectives - Landscaping

- Trees:
  - Red Maple
  - American Hornbeam
  - Black Gum
  - White Oak
  - Swamp White Oak
- Shrubs:
  - Winterberry
  - Arrowhead

Red Maple

American Hornbeam

Winterberry

Project Costs

- **Financial** – estimated cost of $587,000 financed through MCDEP CIP Program using funds generated through the Water Quality Protection Charge
- **Forest** – tree clearing to comply with state dam safety laws along the downstream toe of the dam.
- **Traffic** – construction traffic enter and exit roadways Monday – Friday, 7AM to 4PM
- **Neighborhood** – construction traffic and noise will typically occur Monday – Friday, 7AM to 4PM

Project Benefits

- **Water** – improved water quality and stream water temperature through better management of runoff
- **Environmental** – reduced downstream discharge allows for natural self-repair of stream channel. Increased aquatic and riparian habitat through landscaping and reforestation.
- **Recreational** – increased aesthetic appeal of ponds
- **Maintenance** – safer operating structure that will require minimal structural maintenance in future.

Estimated Design and Permitting Timeline

- **Design** – November 2013 – May 2015
- **Approvals** – May/June 2015
- **Permits** – July 2015
- **Bidding** –August 2015
- **Construction (estimated)** – Sept. – Oct. 2015

What to expect during construction

- **Duration**
  - Approximately 3 months
- **Construction Hours**
  - Monday through Friday, 7AM – 4PM
- **Safety**
  - Open sides of site will be fenced with orange construction safety fence to separate construction from residents.
- **Traffic**
  - Minor impacts to traffic from entering and exiting construction traffic and contractor parking during the day.
- **Noise**
  - Contractor is required to comply with Montgomery County Noise Ordinance – site elevation will help alleviate noise pollution.
- **Sediment**
  - Contractor will be required to comply with Montgomery County Sediment Control Permit and not track dirt onto roads

Questions?

For more information:

- Rebecca Winer-Skonovd 240-499-8531, rebecca.winer-skonovd@montgomerycountymd.gov